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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,783	12/06/2006	Katiuscia Arrighi	290242US0PCT	8685

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EXAMINER	
CUTLIFF, YATE KAI RENE	
ART UNIT	**PAPER NUMBER**
1621	

NOTIFICATION DATE	DELIVERY MODE
09/05/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/578,783	ARRIGHI ET AL.	
	Examiner	Art Unit	
	Yate' K. Cutliff	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/09/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2, 3, 5 6, 7, 11, 16, 17, 19, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 3, 5 6, 7, 11, 16, 17, 19, 20 and 21 recite the limitations i.e. claim 2 in line 3 states "25 and 35%, or claim 6 in line 2 states 2.5 and 2.9; but does not recite units (i.e. by weight, mole, volume, etc.) and it is therefore impossible to determine the scope of Applicants claimed invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1- 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fan W. et al. (CN Application No. 00128111), in view of Bromine Compounds, Ltd. (WO 03/002517), and further in view of Shavel, Jr. et al. (U.S. Patent 3,007,940).

Applicant Claims

Rejected claims 1 and 15 teaches the process for the preparation of l,l-cyclohexanediacetic acid monoamide, which comprises: a) the amination of l,l-cyclohexanediacetic acid anhydride by reaction with aqueous NH_3 at a temperature lower than 30°C by using a NH_3/anhydride molar ratio lower than 3; b) the product precipitation through the acidification of the reaction mixture.

Rejected claims 2, 3, 16, and 17 teach that the NH_3 is in aqueous solution with a concentration amounts. Rejected claims 4 and 18 teach the use of hydrochloric acid in

the acidification step, while rejected claims 5 and 19 teach the concentration amount. Rejected claims 6, 7, 20 and 21 teach the molar rations for ammonia to l,l-cyclohexanediacetic acid anhydride. Rejected claims 8 and 22 teach the reaction temperature.

Rejected claim 9 teaches the precipitation of the l,l-cyclohexanediacetic acid monoamide by acidification of the ammoniacal solution of the monoamide. Rejected claim 10 disclosed the use of hydrochloric acid in the gaseous form, while rejected claim 11 teaches the concentration of the hydrochloric acid.

Rejected claims 11, 12, 13, 14, 23, 24 and 25 teach a process for transforming l,l-cyclohexanediacetic acid into the corresponding anhydride.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Fan et al. teaches discloses a process for preparing 1,1-cyclohexanediacetic acid monoamide by amination of 1,1-cyclohexanediacetic acid anhydride at a temperature of 30-110°C.

Bromine Compounds Ltd., on page 2 discloses a reaction that produces l,l-cyclohexanediacetic acid monoamide by amination with ammonia in an aqueous solution, than the acidification of the reaction product with hydrochloric acid. Further, Bromine Compounds, Ltd. teaches the same type of type of reaction where the reaction temperature is below 20°C, however, the NH3/anhydride molar ratio is 5 to 10. (see page 3 paragraph 5). Additionally, neutralization (acidification to precipitate the l,l-cyclohexanediacetic acid monoamide) is carried out with H_2SO_4. (see page 5 paragraphs 2-3).

Shavel, Jr., in Example 1 at column 4, teaches the process for making cyclohexanediacetic anhydride from cyclohexanediacetic acid in a reaction with acetic anhydride.

Ascertainment of the Difference Between the Scope of the Prior Art and the Claims (MPEP §2141.012)

Fan et al. lacks the express teaching that the reaction temperature is "lower than 30°C" and the molar ratio of ammonia to 1,1-cyclohexanediacetic acid anhydride. For this reason the Examiner joined Bromine Compounds, Ltd which teaches the reaction temperature below 20°C, which is within the claimed range. Also, Bromine teaches the NH3/anhydride molar ratio is 5 to 10. Further, Fan et al. lacks the express teaching of acidification step, however, Bromine Compounds, Ltd. teaches a neutralization step with hydrochloric acid and H_2SO_4. Fan et al. lacks the express teaching of transforming the l,l-cyclohexanediacetic acid into the corresponding anhydride. For this reason Examiner joined Shavel, Jr. et al.

The combination of Fan, et al., Bromine Compounds, Ltd., and Shavel, Jr. et al. do not explicitly disclose some of the claimed limitations, which are directed to the limitations such as the use of different temperatures, the use of different acids and the use of different solvents.

However, the differences appear to be well within the purview of any ordinary artisan.

It would have been obvious to one having ordinary skill in the art to choose any one of the finite processes taught by Fan et al in view of Bromine Compounds, Ltd. and

further in view of Shavel, Jr. et al. with the predictable result to produce the anhydride of 1,1-cyclohexanediacetic acid as taught by Shavel, Jr. et al. and then use that 1,1-cyclohexanediacetic acid anhydride in a amination process to produce 1,1-cyclohexanediacetic acid monoamide as taught by Fan et al in view of Bromine Compounds, Ltd.

Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

8. **No claims are allowed.**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yate' K. Cutliff whose telephone number is (571) 272-9067. The examiner can normally be reached on M-TH 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272 - 0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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